

REMARKS:

Claim 31 is amended to incorporate the subject matter of claim 20 and to recite that the coating is cured.

Claim 32 is amended to recite its dependency on claim 31.

Claim 33 is amended to indicate that the coating is obtained by curing.

Claims 42 and 43 are amended to indicate that they are dependent on claims 20 and 34, respectively.

Claim 41 is canceled.

Claims 1-5, 8, 9, 20-25, 27-40, 42 and 43 remain pending in this application. The amendment filed February 24, 2003, stands objected to under 35 U.S.C. §132, as it allegedly introduces new matter to the disclosure period. In particular, claims 30, 32, 33, 38, 40, and 41 are objected to as being not supported by the original disclosure. Applicants respectfully request withdrawal of this objection.

Claims 30 and 38 corresponds to original claim 16. Claims 32 and 40 correspond to original claim 18. Claims 33 and 40 correspond to original claim 19. Therefore, the subject matter recited in these claims are indeed supported by the original disclosure. Applicants respectfully request withdrawal of this objection.

Moreover, claims 30, 32, 33, 38, 40 and 41 have been added during the course of the prosecution of this application, well prior to filing of the amendment on February 24, 2003. Therefore, the amendment filed on February 24, 2003 has not necessitated this new ground for objection.

Claim 41 stands rejected under 35 U.S.C. §112, first paragraph. Claim 41 is canceled by this amendment and, thus, has obviated this rejection.

Claims 31 and 39-43 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. By the present amendment, these claims are amended to recite that the coating on the substrate is cured. Claims 42 and 43 are amended to recite that they are dependent upon claims 20 and 34, respectively. Accordingly, Applicants respectfully request withdrawal of this rejection.

Claims 1-5, and 8-9 stand rejected under 35 U.S.C. §102(b) as being anticipated by or alternatively under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,326,395 to Aldcroft et al. (hereinafter Aldcroft et al.). These

claims have been rejected based upon combining several generic ranges described by Aldcroft et al. with respect to pore volume and particle size of silica in matting agents and wax content in the matting agents. More particularly, it is stated in the Office Action that Aldcroft et al. discloses, "a wax coated silica matting agent wherein the pore volume is between 0.8 to 2.5 cc/g, the particle size is between 5-9 microns and the wax content is from 5-20 % w/w based on the weight of the silica." Applicants respectfully request reconsideration and withdrawal of this rejection.

The ranges of the wax content, and the silica pore volume and particle size set forth in the present claims are not identical to those ranges set forth in Aldcroft et al., but there is an overlap. Applicants respectfully submit that where the Aldcroft et al. ranges with respect to pore size and particle size of the silica and wax content in the matting agents overlap with those recited in claims 1-10, there is no anticipation. When the prior art discloses a range, which touches, overlaps or is within the claimed range, but not specific examples falling within the claimed range are disclosed, a case-by-case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are directed to a narrow range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious. The question of "sufficient specificity" is similar to that of "clearly envisaging" a species from a generic teaching. See MPEP 2131.02.

The ranges of the silica pore volume and particle size and wax content of the matting agent described in Aldcroft et al. are broad and set those forth in the present claims are narrow. Additionally, the properties of the matting agents in the examples set forth in Aldcroft et al. do not fall within the instantly claimed ranges. Unexpected improved performance of the present invention resulting from the ranges that are instantly claimed has also been demonstrated. Thus, the claimed range has not been disclosed by Aldcroft et al. with sufficient specificity,

and rejection under 35 U.S.C. §102(b) is improper. Accordingly, Applicants respectfully request withdrawal of this rejection.

Moreover, claims 1-5 and 8-9 would not have been obvious under 35 U.S.C. §103(a) over Aldcroft et al. The present invention centers around the discovery that silica matting agents having a combination of elements, including wax content, and pore volume and particle size of the silica used in the matting agents, provides unexpected results in various coating compositions. See page 4, lines 17-26 of the subject specification. These unexpected results include increased matting efficiency and viscosity stability, and that these matting agents may be utilized in both fast and slow curing systems. See pages 11 and 12 of the subject specification. Moreover, the results set forth in Tables 2 and 3 of the subject specification clearly demonstrate that even when one or two of the three parameters (i.e., wax content, pore volume and particle size) are within the claimed ranges and the remaining parameter is not, the resulting coating will not possess the beneficial matting efficiency of the present invention.

In contrast, there is no hint in the teachings of Aldcroft et al. that the combination of wax content and pore volume and particle size of the silica in the matting agent as recited therein would provide unexpected improvements in matting efficiency and viscosity stability, as is set forth in the specification and the claims of the present application. Aldcroft et al. is primarily concerned with utilizing a mixture of different waxes to improve the problem encountered with "hard settlement" of the silica in the paint or laquer. See column 2, lines 5-11.

As mentioned below, Aldcroft et al. teaches the artisan to minimize the amount of wax utilized in the matting agent. See Col. 2, lines 45-98. Moreover, none of the examples set forth in Aldcroft et al. include matting agents containing more than 12 wt% wax. Therefore, one of ordinary skill in the art, after reviewing the teachings of Aldcroft et al., would attempt to limit the amount of wax included in the matting agent. Doing otherwise would completely ignore this teaching of Aldcroft et al. and at the same time accepting other teachings set forth therein.

In addition, the disclosure in Aldcroft et al. that there is no increase in desirable properties imparted to the silica matting agent when using an increased amount of wax points to the unexpected results of the instant invention. The

improved matting efficiency set forth in Table 2 of the subject application is therefore truly unexpected.

Additionally, there is no mention or suggestion in Aldcroft et al. of the combined effect that pore volume particle size in wax content imparts on the matting efficiency of the resulting coatings. The artisan, after reviewing the teaches of Aldcroft et al., would not have been motivated to select the specific pore volume, particle size and wax content of the matting agent set forth in the instant claims. Therefore, a *prima facie* case of obviousness has not been presented in the Office Action. Even if a *prima facie* case of obviousness has been presented, the unexpected matting efficiency results set forth in the subject application clearly demonstrate non-obviousness of the claimed invention. Therefore, Applicants respectfully request withdrawal of the above-mentioned 35 U.S.C. §103 rejection.

Applicants also respectfully assert that the February 23, 2003 Amendment did not necessitate this new ground of rejection (i.e., the new rejection of claims 1-5 and 8-9 under 35 U.S.C. §103(a) over Aldcroft et al.) In that Amendment, claims 1-5 and 8-9, were not amended. Thus, the finality of May 19, 2003 Office Action is improper, and withdrawal of the finality is respectfully requested.

Claims 1-5, 8, 9, 20-23, 25, 27-29, 34-37, 39 and 40 stand rejected under 35 U.S.C. §103(a) as being inpatentable over WO 98/58030 (hereinafter '030 PCT Patent Application), in view of Aldcroft et al. Applicants respectfully request reconsideration and withdrawal of this rejection.

The '030 PCT patent application describes a wax-coated silica having among other characteristics, a wax content of 6-15 wt %. See page 5, lines 4-19. The crux of the '030 PCT patent application lies in the use of diluents (i.e., vinyl monomers) that enables use of the matting agent in cationic curable systems. See page 2, lines 27-34. There is no mention or suggestion that any of the presently claimed elements (i.e., pore volume and particle size of the silica, and the wax content of the matting agent) provides any difference in the resulting properties of the coatings. The '030 PCT patent application is completely silent regarding any effect that the different proportions or ranges of these elements would have on matting efficiency or viscosity stability. As above-mentioned, even though Aldcroft et al. discloses a wax content of 5-20 % by weight of a wax-coated silica

matting agent, it teaches that one should minimize the amount of wax utilized in the matting agent. In particular, Aldcroft et al., suggests using less wax content since there is no increase of desirable properties imparted to the silica matting agent and the use of increased wax would be considerably more costly (col. 2, lines 45-48).

Applicants emphasize that there would have been no motivation for the artisan, when viewing Aldcroft et al. and the '030 PCT patent application, to have utilized the three ranges (i.e., the amounts of wax content, and pore volume and particle size of the silica) as recited in the instant claims. The '030 PCT patent application describes a range of 6-15 wt % wax content in a matting agent and Aldcroft et al. specifically mentions that the use of additional wax in such matting agents provides no improvement, just an increase of cost. The artisan would have been motivated to utilize a wax content of less than 10%, since these are the preferred embodiments set forth in the Aldcroft et al. examples and Aldcroft et al. expressly teaches to use less wax content.

Thus, one of ordinary skill in the art would not have even arrived at the presently claimed invention, and a *prima facie* case of obviousness under 35 U.S.C. §103 has not been presented. Withdrawal of the 35 U.S.C. §103 rejection is respectfully requested by the Applicants.

Even if a *prima facie* case of obviousness under 35 U.S.C. §103 has been presented, the unexpectedly improved results obtained by the presently claimed invention rebuts any such *prima facie* case. If the proportions are critical to the properties of a novel product, they can render the product patentable even though the percentages of ingredients fall within the broader ranges of the prior art. *Becket v. Coe* (CADC 1938) 98 F2d 332, 38 USPQ 26; *In re Becket et al.* (CCPA 1937) 88 F2d 684, 33 USPQ 33; *In re Arness* (CCPA 1938) 95 F2d 344, 37 USPQ 217.

In addition, the fact that the percentage of the chemical components of a chemical compound fall within the general proportions of the references does not preclude patentability where the disclosure of the specification is persuasive of the criticality of the claimed proportions, *Ex parte Selby* (POBA 1966) 153 USPQ 476; *In re Waymouth et al.* (CCPA 1974) 499 F2d 173, 182 USPQ 290; *In re Russell* (CCPA 1971) 439 F2d 1228, 169 USPQ 426.

In the instant application, Applicants respectfully submit that the data set forth in Tables 1-3 and Figures 1-6 demonstrate the unexpectedly improved results of the claimed invention over various comparative Examples. It is interesting to note that comparative Examples 1 and 3, as well as SYLOID® ED 30 fall within the ranges set forth in Aldcroft et al. These three comparative Examples yield matting efficiencies that are significantly worse than the matting efficiency of Example 1 of Applicants' invention. Moreover, Figure 4 demonstrates that comparative Example 3 and the ED 30 Example are significantly less stable over time than the matting agent of Example 1.

Accordingly, it is submitted that the claimed matting agent provides unexpectedly improved results over those set forth in Aldcroft et al. and the '030 PCT patent application, which rebuts any *prima facie* case of obviousness that may have been presented in the Office Action. Applicants respectfully request withdrawal of the above-mentioned 35 U.S.C. §103 rejection.

On page 3 of the Office Action, it is contended that the claims are not commensurate in scope with the Examples set forth in the specification. Applicants submit that the Examples according to the subject invention fall within the instantly claimed ranges and the comparative Examples are within the scope of Aldcroft et al. Thus, the claims are commensurate in scope with the specification.

On page 4 of the Office Action, it is suggested that the Examples of the present application do not show criticality with respect to the results obtained from the claimed ranges. Applicants submit that the relevant portions of the claimed ranges are indeed supported by unexpected results. See, for example, Table 2 and Table 3 of the subject specification where a wax content of up to 20%, a pore volume of as low as 1.1 ml/g, and a mean particle diameter of as low as 3.29 microns is utilized for comparative Examples. Also, it is important to note that unexpected results arise from a combination of these three parameters, which is not even remotely recognized by Aldcroft et al. or WO '030. This clearly represents unexpected results (e.g., matting efficiency, viscosity, viscosity stabilization, etc.) of the presently claimed invention over Aldcroft et al. and WO '30.

In view of the above amendments and remarks, Applicants respectfully submit that the above-identified patent application is now in condition for allowance. Accordingly, Applicants respectfully solicit an indication to that effect in the form of a Notice of Allowability.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "William D. Bunch".

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